

What is claimed is:

1. A semiconductor device having a thin film transistor,
the semiconductor device comprising;

a silicon oxide nitride film formed over a substrate;
and

a semiconductor film formed over the silicon oxide nitride
film, wherein the silicon oxide nitride film ranges from 0.3
to 1.6 in a ratio of the concentration of nitrogen to the
concentration of silicon.

2. A semiconductor device having a thin film transistor,
the semiconductor device comprising;

a silicon oxide nitride film formed over a substrate;
and

a semiconductor film formed over the silicon oxide nitride
film, wherein the silicon oxide nitride film ranges from 0.1
to 1.7 in a ratio of the concentration of oxygen to the
concentration of silicon.

3. A semiconductor device having a thin film transistor,
the semiconductor device comprising;

an insulating film formed over a substrate and having
at least a silicon oxide nitride film and an insulting layer
containing silicon and oxygen; and

a semiconductor film formed over the insulating film;
wherein the silicon oxide nitride film ranges from 0.3 to 1.6
in a ratio of the concentration of nitrogen to the concentration
of silicon.

4. A semiconductor device having a thin film transistor,
the semiconductor device comprising;

an insulating film formed over a substrate and having at least a silicon oxide nitride film and an insulting layer containing silicon and oxygen; and

a non-single crystal semiconductor film formed over the insulating film,

wherein the silicon oxide nitride film ranges from 0.1 to 1.7 in a ratio of the concentration of oxygen to the concentration of silicon.

5. A device according to claim 3, wherein the silicon oxide nitride film is in contact with a surface of the substrate.

6. A device according to claim 4, wherein the silicon oxide nitride film is in contact with a surface of the substrate.

7. A device according to claim 3, wherein the semiconductor film is in contact with a surface of the insulating layer containing silicon and oxygen.

8. A device according to claim 4, wherein the semiconductor film is in contact with a surface of the insulating layer containing silicon and oxygen.

9. A device according to claim 3, wherein the insulating layer containing silicon and oxygen is made of silicon oxide nitride containing silicon, oxygen and nitrogen and wherein a ratio of the concentration of nitrogen to the concentration of silicon ranges from 0.1 to 0.8.

10. A device according to claim 3, wherein the insulating layer containing silicon and oxygen is made of silicon oxide.

11. A device according to claim 4, wherein the insulating layer containing silicon and oxygen is made of silicon oxide.

12. A method for manufacturing a semiconductor device, the method comprising the steps of:

forming an insulating film having at least a silicon oxide nitride layer over a substrate; and

forming a semiconductor film over the insulating film, wherein the silicon oxide nitride layer ranges from 0.3 to 1.6 in a ratio of the concentration of nitrogen to the concentration of silicon.

13. A method for manufacturing a semiconductor device, the method comprising the steps of:

forming an insulating film having at least a silicon oxide nitride layer and an insulating layer containing silicon and oxygen over a substrate; and

forming a semiconductor film over the insulating film, wherein the silicon oxide nitride layer ranges from 0.3 to 1.6 in a ratio of the concentration of nitrogen to the concentration of silicon, and wherein the semiconductor film is formed in contact with a surface of the insulating layer containing silicon and oxygen without exposing the surface of the insulating layer containing silicon and oxygen to the atmosphere.

